



Technologists Around the Campfire

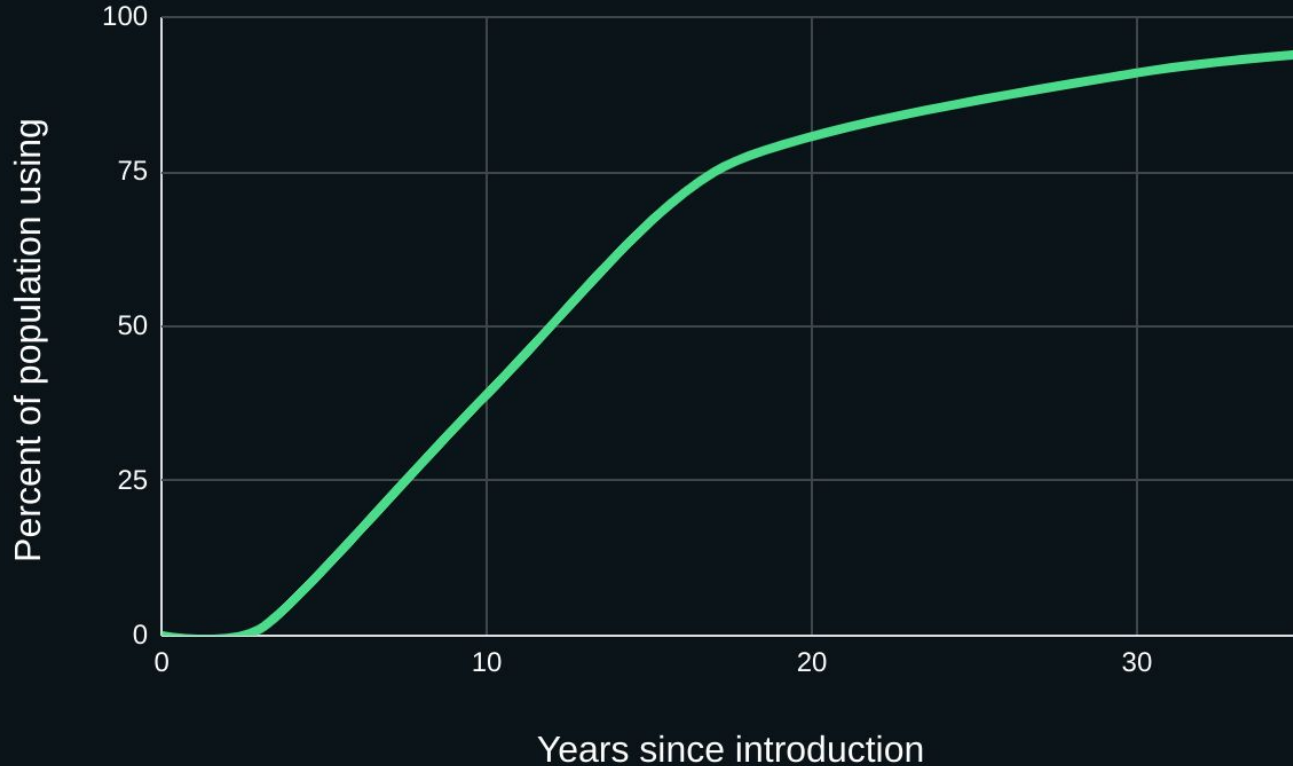
Social Audio as a Vector for
Engineering Wisdom

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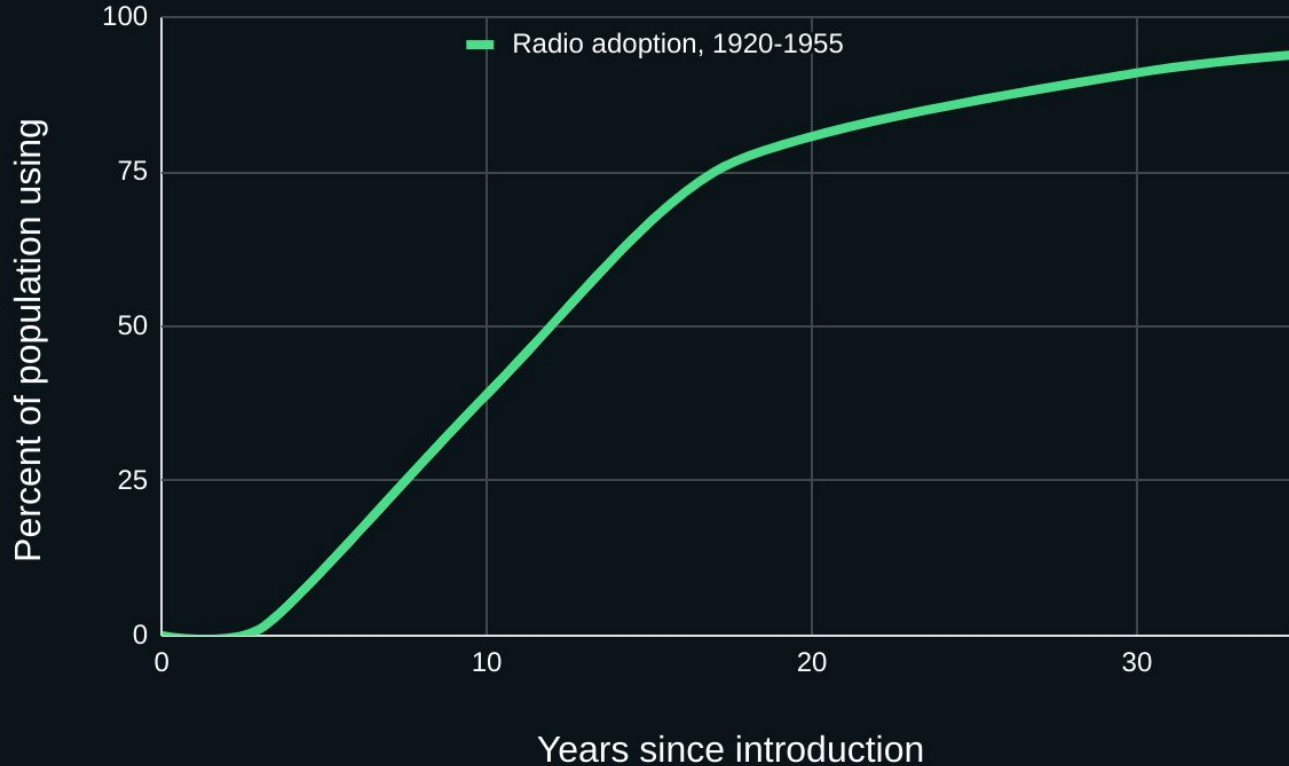
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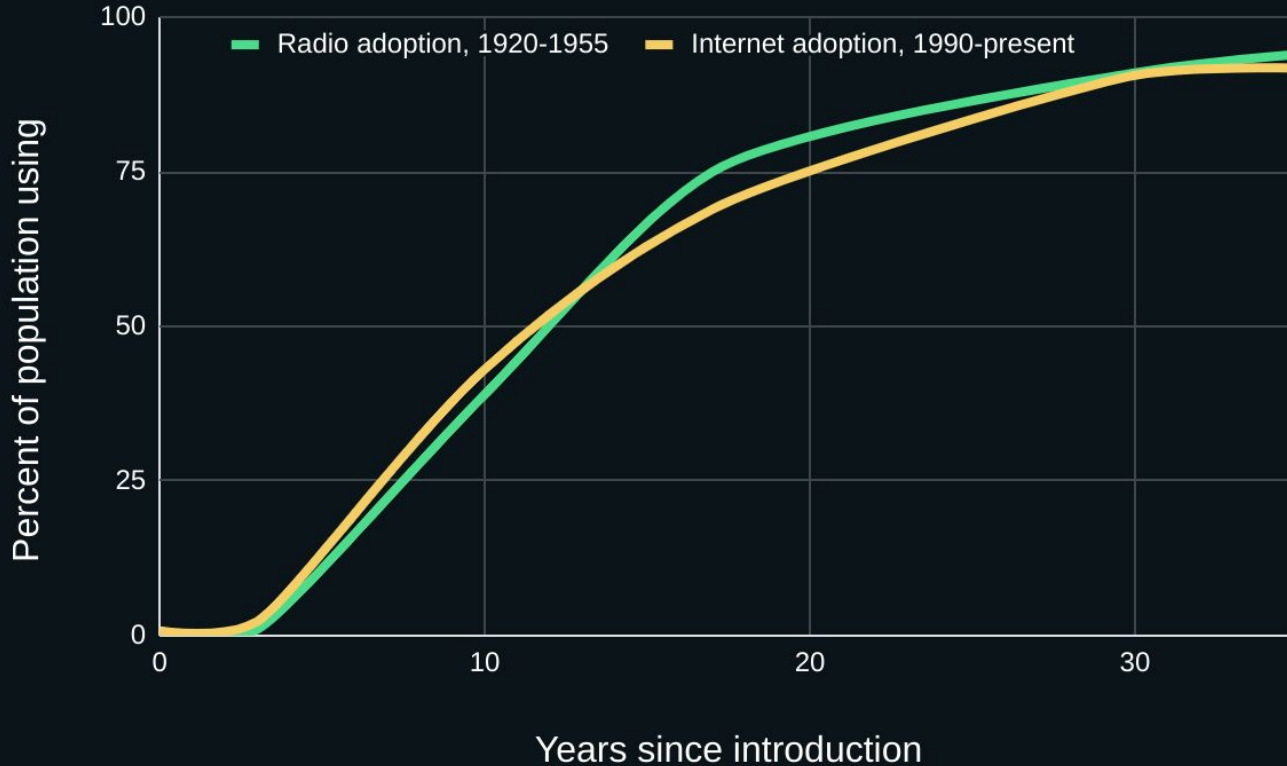
Technological adoption



Technological adoption: Radio



Technological adoption: Radio v. Internet



The radio explosion

- The advent of broadcast radio mirrors the adoption of the internet: in 1923, 1% of US households owned a radio; by 1937, 75% did
- This era before television was the **Golden Age of Radio**, when radio was the dominant means of mass communication
- Essentially all mass communication – news, music, drama, comedy, sports, religion, politics, commerce – happened on radio

Radio after television

- With the advent (and explosive ubiquity!) of television, radio was forced to change: most scheduled programming went to TV
- Large blocks of unscheduled content (music, sports, talk) became the norm, with each of these going through their own adaptations
- Speaking very personally, radio generated the voices of my youth: Bob Martin & Larry Zimmer; Bruce Williams; Tom and Ray Magliozzi
- Unlike other technological shifts, television *changed* radio, but it did not *obviate* it; why did radio continue to endure?

The power of audio: Divided attention

- Audio has an extraordinary power: unlike watching video, listening to audio allows you to easily **divide** your attention!
- Listening to audio that does not demand your attention (i.e., background music) can help focus on cognitively intense tasks
- Listening to audio that does demand your attention can help maintain alertness and energy on a repetitive task (housework, walking, driving) – and can allow you to better focus your attention on audio!

Audio renaissance

- The radio became present in every car; as more time was spent in the car, radio experienced a **renaissance**
- e.g. NPR (started only in 1970!) became the way many got their news
- Within this resurgence, a renaissance of audio storytelling in the mid 1990s led by Ira Glass and *This American Life*
- *This American Life* represented a return to the Golden Era of audio in that it used audio very deliberately to tell people's **stories**

Storytelling

- We are predisposed to stories, and audio is our oldest form of storytelling: we **tell** stories of our own and we **listen** to stories of others
- Stories are *not* simply a recounting: they are captivating because they arouse our empathy (and curiosity!) – we care what happens next
- Pre-literate societies used speaking and listening to convey wisdom; we are hard-wired to learn from the experiences of others
- **Stories are especially important for technologists!**

Dawn of podcasting

- Radio was (mainly) strictly broadcast; recordings were available, but were prohibitively expensive for what amounted to a single use...
- The explosion of the internet in the late 1990s gave rise to Internet radio, but it was hamstrung by proprietary formats and desktop form factors
- While it was not the first portable MP3 player, Apple's iPod had an outsized influence: **podcasting** was born
- Importantly, podcasts were **syndicated** via RSS feeds

Podcasting accelerants

- Podcasts remained arguably niche for a decade, but several trends served to accelerate it into a broader mainstream...
- Growing ubiquity of smartphones (starting ca. 2007) no longer demanded a dedicated MP3 player
- Bluetooth enabled for wireless headphones, which more allowed for a wider range of tasks to be done while listening
- Breakthrough ultra longform podcasts like Serial (2014) from *This American Life* alumna Sarah Koenig brought broader attention

Starting a ~~company~~ podcast!

- When we started Oxide in 2019, we knew that we would also start the podcast that we had always wanted: **stories** from **engineers**
- *On the Metal* was born – and thanks to the technologists who joined us, the stories were more compelling than we could have imagined!
- Many engineers who now work at Oxide were introduced to the company by listening to *On the Metal*
- We were well into recording our second season when our plans for the podcast were interrupted...

The pandemic

- With the pandemic and lockdown in 2020, *On the Metal* – which we had been recording in person – went on indefinite hiatus
- We assumed that we would get back to recording them, but lockdown extended longer than we had anticipated (and we had also become very busy building the product!)
- But as with so much, the pandemic gave as well as took, in the form of a new twist on an old medium: **social audio**

Social audio

- Social audio is the use of real-time audio (that is, conversation!) within social networks on the internet
- Social audio provided an outlet that a socially isolated populace craved, as demonstrated by the explosion of popularity in Clubhouse
- Despite initial enthusiasm, Clubhouse also badly fumbled: iPhone-only; focused on monetization rather than value; focused on conversations with celebrities rather than peers; overrun with crypto enthusiasts
- In 2021, Twitter released their social audio feature, Twitter Spaces...

Trying Twitter Spaces

- We missed audio, and Twitter Spaces seemed like a great experiment!
- I convinced longtime friend and colleague Adam Leventhal to join me so I wouldn't die alone; we held our first Twitter Space on May 3, 2021
- Twitter Spaces were immediately compelling: the dynamic of known voices plus new ones led to great conversations
- Twitter Spaces had no recording feature, but Adam constructed a Rube Goldberg-esque contraption to record them
- We published the recordings (YouTube + RSS) as *Oxide and Friends*

From Spaces to Discord

- Twitter Spaces was promising, but also maddening: many bugs and shortcomings – and not necessarily headed in the right direction
- With Twitter's new ownership, it became clear that we needed a new platform; after some experimentation, we settled on Discord
- Discord is compelling in part because of its roots as true social audio (audio communication among friends) rather than celebrity worship
- Discord's stage functionality allows for new voices, easily managed
- Having a concurrent text chat has been a tremendous improvement!

Oxide and Friends

- *Oxide and Friends* has been exactly that: hanging out with friends (old ones and new!) talking about topics that are topical or interesting to us
- There have been interesting discussions – but also lots of storytelling, rants on topics of the day, predictions (and debates!) on future technologies, ~~disagreements on~~ corrections to pronunciation, etc.
- In short, what engineers talk about!
- The conversations have been well-received – but one particular group has seemed to find them especially compelling: **younger engineers**

Engineering wisdom

- Younger engineers are particularly drawn to Oxide and Friends because it is social audio as a vector for **engineering wisdom**
- That is, a group of seasoned engineers expanding their circle to younger ones, showing their scars and sharing their perspectives
- This shouldn't have been surprising, but we had (accidentally!) recreated online what I had always most cherished as a younger engineer...

Social audio ca. 1997: Osteria (Palo Alto, California)



Social audio ca. 2006: Osteria (Palo Alto, California)



The power of social audio

- Social audio allows for a standing hallway track, but potentially vastly improved: open, recorded, accessible – and remote-friendly!
- It allows for a team to speak in **its own voice** about its creations
- For Oxide, this includes bringup, compliance, supply chain, debugging, system software, distributed systems – and whole lot of Rust
- For some of these topics, no team has **ever** gone on the record with their experiences – it shines a light on broadly hidden domains
- It is essential for younger engineers to see these domains!

Social audio as a vector for engineering wisdom

- Social audio presents a new vector for an age-old means for conveying our hard-won engineering wisdom – and every team can do this
- There are things that happen on every engineering team that someone somewhere else will find interesting; you needn't cater to everyone!
- To be effective, social audio should be: open, **recorded**, and syndicated
- Check out the *Oxide and Friends* back catalog – and join us live!
- If you start your own, please let us know so we can like-and-subscribe!